northwest Clean Air agency
1600 South Second Street
Mount Vernon, WA 98273-5202
ph 360.428.1617
fax 360.428.1620
www.nwcleanair.org

Air Operating Permit
Excess Emissions Report
Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	Oct 11, 2010	Incident type: breakdown/ upset/startup or shutdown	Upset/Startup
Start Date	Oct 11, 2010	Start Time:	1:00 AM
End Date	Oct 11, 2010	End Time:	2:00 AM
Process unit or system(s): HTU 3			

Incident Description

On October 10, 2010 at approximately 9:00 PM the HTU3 H2S in fuel gas went high during startup. The HTU3 shutdown on Friday Oct 8 after the FCCU was shut down due to a riser line leak. The FCCU and HTU3 began restart Sunday afternoon, resulting in high H2S in the HTU3 fuel gas. The HTU3 operators increased amine circulation and steam rates to the absorbers to improve amine treating of the fuel gas. The HTU3 H2S limits of 162-ppmv 3-hour rolling average and 50-ppmv 24-hour rolling average were exceeded.

After the FCCU and HTU3 shutdown, and with the DCU down for heater pigging, the sulfur load in the refinery was very low. The ARU's were trying to maintain lean amine loadings in accordance with operating limits so the steam stripping was reduced. When the FCCU and the DCU restarted, the sulfur load increased and the ARU's started increasing the steam to amine to maintain the lean amine loading. Once all units were back to normal operating conditions the H2S in fuel gas dropped.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

Operations began immediately to troubleshoot the units.

Applicable air operating permit term(s): 5.7.19 and 5.7.20

Estimated Excess Emissions:	Pollutant(s):	Pounds (Estimate):
Based on a H2S CEMS and fuel gas flow meter.	H2S	13

The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☒ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

- ☒ No

☐ Yes (provide details below)

Root and other contributing causes of incident:

The root cause of this incident was imbalances in the refinery amine system due to unplanned unit shutdowns.

The root cause of the incident was:
(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

☒ Identified for the first time
☐ Identified as a recurrence (explain previous incident(s) below – provide dates)

The root cause of this incident was imbalances in the refinery amine system due to unplanned unit shutdowns.

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

☐ No
☒ Yes (describe below)

The root cause of this incident was imbalances in the refinery amine system due to unplanned unit shutdowns.

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2
Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

The root cause of this incident was imbalances in the refinery amine system due to unplanned unit shutdowns. Normal startup and shutdown procedures were followed and Operations will consider reviewing these procedures.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing? ☒No ☐Yes
Is the source requesting additional time for completion of the report? ☒No ☐Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: _ Fred Stone __ Date: ___October 4, 2010

Responsible Official or Designee: for SLC Date: 11/30/10